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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			ELLIOTT IV, BENJAMIN H	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/590,033	<b>Applicant(s)</b> YAGYU ET AL.	
	<b>Examiner</b> BENJAMIN ELLIOTT	<b>Art Unit</b> 2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5,6,8-10 and 29-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6, 8-10, and 29-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1, 5, 6, 8-10, and 29-34 have been examined and are pending.  
Claim 30 has been amended to overcome minor informalities. No new matter has been added.

### ***Response to Amendment***

2. In response to the amendments received in the Office on 11/04/2010, the objection to Claim 30 has been withdrawn.

### ***Response to Arguments***

3. Applicant's arguments filed 11/04/2010 have been fully considered but they are not persuasive. Applicant argues United States Patent 6,80,259 B1 to Zhang (hereinafter "Zhang") and United States Patent Application Publication 2003/0112810 A1 to Nakabayashi et al. (hereinafter "Nakabayashi") fails to disclose certain limitations of Claims 1, 6, 29, and 32. Examiner respectfully disagrees for at least the following reasons.
4. Applicant argues Zhang fails to disclose "a location table to record an address of each of said plurality of wireless base stations that structure a network, in association with an address of the terminal device currently existing under said each wireless base station" (Remarks, page 12). Examiner respectfully disagrees. The claim limitation, broadly interpreted, calls for each base station to record an IP address of a plurality of base stations that comprise a network. Applicant argues Zhang's global/mirrored profile subscriber list 160 is

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not a record of an address of each of said plurality of wireless base stations. It is respectfully submitted that the “network” of the claims design only requires a minimum of two base stations to be structured. Secondly, Zhang discloses each wireless base station stores an IP address of another wireless base station in order for seamless hand-off when a subscriber moves from the cell of one base station to another (Zhang: Col. 9, line 57 through Col. 10, line 5 and Col. 5, lines 42-52). Since the location table of Zhang (Figures 4B and 4C) shows a plurality of entries for base wireless stations, and mirrored base stations are by definition adjacent coverage areas (Zhang: Col. 10, lines 6-20), Zhang recites the feature of a location table. The claim further recites “in association with an address of the terminal device currently existing under said each wireless base station”. This is disclosed as a subscriber list for each base station (Zhang: Col. 10, lines 45-55. Each list contains the subscriber information of the terminal, and the associated base station that owns the subscriber.). Examiner is unsure if it is the Applicant's intent to show a list for each terminal currently under each wireless base station, or to show just one particular terminal that currently belongs to any one of each of the wireless base stations.

5. Applicant argues Nakabayashi fails to disclose “a route control table describing each of the other wireless base stations as a root bridge or a destination bridge of a transmission path in the network in association with a next hop to which the received packet is to be forwarded” (Remarks, page 13). The claim limitation, broadly interpreted, calls for a route control table that identifies only one of another wireless base stations as a root bridge or a destination

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bridge in a communication path in association with a next hop along said path. This is simply a routing table that identifies the next hop and identifies the next hop as either the destination or the root bridge. Examiner considers the claim limitation to comprise a routing table that includes some identification of a bridging node or device of which a packet is to be forwarded in association with a next hop, wherein the next hop is determined based on the source or destination terminal that currently belongs to the wireless base station (bridge). Nakabayashi discloses a next hop is determined on the basis of certain parameters as determined by a spanning tree protocol (Nakabayashi: [0016]). The topology determination is different than the path setting in that a network topology is first determined based on the communication quality of viable wireless bridges that may be connected to a root bridge (Nakabayashi: [0019]). Path setting is determined based on both the spanning tree protocol and the destination address of the received packet (Nakabayashi: [0040-0041]). Nakabayashi further discloses a routing table for the determination of path setting (Nakabayashi: Figure 5). Nakabayashi discloses in Figure 5 in conjunction with [0050] and Figure 1, the destination address, 23, of Figure 5 is the terminal address of the destination device to which the next hop wireless station is connected (See Figure 1 of Nakabayashi for terminal devices connected to wireless base stations.). This base station is chosen based on communication quality, however, the received packet contains the destination address of the destination terminal to which the path must be set. In terms of path setting, the wireless base station (next hop) that must be chosen should at the very least contain the terminal

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destination address of the destination terminal. If it is the Applicant's intent to disclose in the claim limitation that the next hop is the wireless base station (or bridge), Nakabayashi discloses the bridge ID of the wireless base station in Figure 5 in conjunction with Figures 6 and 8. In order to establish a path setting, Nakabayashi first determines if the wireless base stations are connectable. In other words, do the wireless base stations meet a particular connectivity value, and if they do, set a connectivity table in a descending order of signal reception levels (Nakabayashi: [0065-0071]). Based on the reception levels and the values in the connectivity table, Nakabayashi determines the values of the parameter table (which is associated with the routing table, [0053]) to facilitate the topology control operations such as path settings, including the bridge that is associated with the next hop in the path. The bridge ID value of the routing table is therefore associated with the root or destination bridge of a transmission path in the network in association with a next hop to which the received packet is to be forwarded. The Applicant further asserts that Nakabayashi is silent with regards to the "next hop", wherein the "next hop" is determined in accordance with a wireless base station to which a source terminal device or a destination terminal device currently belongs (Remarks, page 14). Examiner restates that Nakabayashi clearly shows a "next hop" value in that Nakabayashi determines the values of the parameter table (which is associated with the routing table, [0053]) to facilitate the topology control operations such as path settings, including the bridge that is associated with the next hop in the path. The bridge ID value of the routing table is therefore associated with the root or destination

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bridge of a transmission path in the network in association with a next hop to which the received packet is to be forwarded.

6. Applicant further argues the combination of Zhang and Nakabayashi is not an obvious one (Remarks, pages 14-15). Examiner respectfully disagrees. In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, Zhang and Nakabayashi are of similar fields in that both disclose a means to decrease network traffic (congestion) by reducing the amount of messages transferred in the network (Zhang: Col. 5, lines 38-41 and Nakabayashi: [0010-0012]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include forwarding packets through a transmission line as taught by Nakabayashi to increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network (Nakabayashi: [0098]).

7. Applicant argues Nakabayashi fails to disclose, with regards to Claim 29, a "packet creating unit" (Remarks, pages 15-16). Examiner respectfully

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disagrees. Examiner understands this limitation to mean appending wireless base station information to a received packet if the wireless base station is the first to receive the packet. In other words, the wireless base station is simply adding information to a packet as a means to identify itself as a “hop” or relay in the path of communication. Examiner has given the terms “a packet” and “a wireless base station” their broadest, reasonable interpretation, read in light of the specification. If “a packet” is received at a first wireless base station, it is reasonable to assume, read in context of the claim as presented, that “a wireless base station”, meaning *any* wireless base station may add its address information to the packet. This claim limitation is broadly interpreted to encompass adding wireless base station address information of a wireless base station of the connected source of the transmitted packet. In other words, the source of the packet may be the source that is connected to bridge that is to append the packet with said wireless base station address information.

Nakabayashi discloses the addresses of the address fields of the MAC frame ([0009]) to include the transmitting source (forwarding source) MAC address TA (transmitter address) in the wireless section, the address field 113 contains the destination (forwarding destination) MAC address RA (receiver address) in the wireless section, the address field 117 contains the MAC address SA (source address) of the packet transmitting source terminal, and the address field 115 contains the MAC address DA (destination address) of the packet destination terminal (Nakabayashi: Figure 2 and [0040]). Nakabayashi also discloses each wireless bridge analyzes the TA and SA addresses to identify the MAC address



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of the connection wireless bridge. With regards to the limitation, if said one of the wireless base stations is a wireless base station that *first* received a packet from a terminal device, to add address information of a wireless base station, to which the source terminal device or the destination terminal device of the received packet currently belongs, it is submitted by the Examiner that any base station connected to a source terminal would receive the packet first, and Nakabayashi discloses the addresses of the address fields of the MAC frame ([0009]) to include the transmitting source (forwarding source) MAC address TA (transmitter address) in the wireless section (Nakabayashi: Figure 2 and [0040]).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
10. This application currently names joint inventors. In considering

patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1, 5-6, 8-10, and 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,810,259 B1 to Zhang (hereinafter "Zhang"), in view of US Patent Publication 2003/0112810 A1 to Nakabayashi et al. (hereinafter "Nakabayashi").

**Regarding Claim 1**, Zhang discloses **a packet transmission system comprising:**

**a plurality of wireless base stations** (Zhang: Figure 3a. The network comprises at least two base stations.);

**and one or more terminal devices belonging to one of the wireless base stations** (Zhang: Figure 3a; Col. 7, lines 10-15. Each base station has at least one mobile host belonging to it.);

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**wherein each of the wireless base stations has a location table to record an address of each of said plurality of wireless base stations that structure a network, in association with an address of the terminal device currently existing under said each wireless base station** (Zhang: Col. 10, lines 21-29. Each base station contains a copy of a local subscriber list of its mirrored base station. Col. 10, lines 45-55. Each list contains the subscriber information of the terminal, and the associated base station that owns the subscriber.), **and each of the wireless base stations is configured to exchange the information in the location table with the other wireless base stations to update the location table** (Zhang: Col. 11, lines 33-38. Each base station is operative to transmit copies of the list to its associative mirror base station.), **and each of the wireless stations is configured to, upon receiving a packet, identify a wireless base station to which the source terminal device or the destination terminal device currently belongs according to the location table, based on a source address of the source terminal device or a destination address of the destination terminal device, respectively, included in the received packet to find the next hop according to the route control table** (Zhang: Col. 31, lines 4-19. Part of the process for authenticating a new host is to have mirrored base stations search their subscriber profile lists for the new host. Col. 10, lines 55-59. Each global/subscriber list contains the address associated with the mobile host.)

Zhang is silent on forwarding to the next hop.

Nakabayashi discloses **a route control table describing each of the other wireless base stations as a root bridge or a destination bridge of a transmission path in the network in association with a next hop to which the received packet is to be forwarded, the next hop being determined in accordance with a wireless base station to which a source terminal device or a destination terminal device currently belongs to one of the wireless base station** (Nakabayashi: Figure 4, [0047]. Each wireless base station contains a routing table. Figure 5, [0050]. The table contains information regarding a plurality of ports of a wireless bridge associated with a plurality of terminals existing in the direction of the connected, associated bridge. [0053]. A parameter table contains information corresponding to a port described in the routing table. [0059]. The connected bridge ID field contains the ID of the neighboring wireless bridge connected to the wireless bridge. [0064]. The packet is determined to be local or multicast.). Nakabayashi further discloses the ability to **transmit the packet to the next hop** (Nakabayashi: [0066]. The connection table is then utilized to determine the next wireless bridge to forward the packet based on the destination address and signal quality. Also see [0016], [0019], [0040-0041] and Figure 5.).

Zhang and Nakabayashi are of similar fields in that both disclose a means to decrease network traffic (congestion) by reducing the amount of messages transferred in the network (Zhang: Col. 5, lines 38-41 and Nakabayashi: [0010-0012]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include

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forwarding packets through a transmission line as taught by Nakabayashi to increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network (Nakabayashi: [0098]).

**Regarding Claim 5**, the combination of Zhang and Nakabayashi discloses **the packet transmission system of claim 1, wherein the received packet includes an ID of a transmission tree used to transmit said received packet or address information representing the wireless base station to which the source terminal device or the destination terminal device currently belongs** (Nakabayashi: [0059]. The connected bridge ID field (of the parameter table, in association with the routing table) contains the ID of the neighboring wireless bridge connected to the wireless bridge. Figure 5 shows multiple entries in the “Bridge ID” column suggesting multiple wireless bridges connected.); **and wherein each of the wireless base stations is configured to determine the next hop to which the received packet is to be forwarded from the route control table based on the ID information of the transmission tree or the address information of the wireless base station included in the packet** (Nakabayashi; [0019]. Packets can either be multicast or broadcast along a transmission signal to wireless bridges in a network. The packet contains a destination address. Figure 4, [0047]. Each wireless base station contains a routing table. Figure 5, [0050]. The table contains information regarding a plurality of ports of a wireless bridge associated with a plurality of terminals existing in the direction of the connected, associated bridge. [0053]. A parameter table contains information corresponding to a port described in the

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routing table. [0059]. The connected bridge ID field contains the ID of the neighboring wireless bridge connected to the wireless bridge. [0064]. The packet is determined to be local or multicast.).

**Regarding Claim 6, Zhang discloses a wireless base station constituting, together with other wireless base stations, a packet transmission system using a wireless packet network** (Figure 3a. The network comprises at least two base stations. Col. 7, lines 10-15. Each base station has at least one mobile host belonging to it.), **comprising:**

**a location table to record an address of each of the wireless base stations in said transmission system, in association with an address of each of terminal devices currently participating in the network and existing under a corresponding one of the wireless base stations** (Zhang: Col. 10, lines 21-29. Each base station contains a copy of a local subscriber list of its mirrored base station. Col. 10, lines 45-55. Each list contains the subscriber information of the terminal, and the associated base station that owns the subscriber.).

Zhang is silent on incorporating a routing table, receiving and transmitting units, and a route determination unit.

Nakabayashi discloses **a route control table describing each of the wireless base stations as a root bridge or a destination bridge of a transmission path in the network in association with a next hop to which a packet is to be forwarded assuming that said one of the other wireless base stations, the next hop being determined in accordance with a wireless base station to which a source terminal device or a destination terminal**

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**device belongs** (Nakabayashi; Figure 4, [0047]. Each wireless base station contains a routing table. Figure 5, [0050]. The table contains information regarding a plurality of ports of a wireless bridge associated with a plurality of terminals existing in the direction of the connected, associated bridge. Also see [0016], [0019], [0040-0041] and Figure 5.);

**a route determination unit configured to identify a wireless base station to which the source terminal device or the destination terminal device currently belongs according to the location table, based on a source address of the source terminal device or a destination address of the destination terminal device included in a received packet and find the next hop according to the route control table** (Nakabayashi; Figures 4 and 8, [0066]. The connection table contains information identifying other wireless bridges in the range where packets may be sent or received. [0048]; processor and MAC controller determine wireless bridge path setting.);

**and a packet transmission unit configured to transmit the packet to the next hop according to the determination result** (Nakabayashi; Figure 4, [0046]. The wireless bridge contains a transmission/reception circuit, 11.).

Zhang and Nakabayashi are of similar fields in that both disclose a means to decrease network traffic (congestion) by reducing the amount of messages transferred in the network (Zhang: Col. 5, lines 38-41 and Nakabayashi: [0010-0012]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include forwarding packets through a transmission line as taught by Nakabayashi to

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increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network (Nakabayashi: [0098]).

**Regarding Claim 8**, Zhang discloses **the wireless base station of claim 6, wherein the packet transmission unit transmits a message packet reporting participation of a new terminal device when the new terminal device belongs to the wireless base station** (Zhang: Col. 22, lines 24-42. A message is propagated from a base station, either through multicasting or broadcasting, when a new mobile host enters (authenticated) the coverage area of said base station.).

**Regarding Claim 9**, the combination of Zhang and Nakabayashi discloses **the wireless base station of claim 6, wherein when the receiving unit receives a message packet reporting a new terminal device having belonged to one of the other wireless base stations, the route determination unit updates the location table** (Nakabayashi; Figure 4, [0048]. A processor contained in each wireless bridge executes network topology control used for updating table information such as wireless bridge path setting.).

**Regarding Claim 10**, the combination of Zhang and Nakabayashi discloses **the wireless base station of claim 6, wherein when the receiving unit receives a packet from a source terminal device belonging to this wireless base station, the packet transmission unit writes an address of a destination side wireless base station to which a destination terminal device currently belongs in the packet, and then transmits the packet to the next hop according to the route control table** (Nakabayashi; [0096]. If the



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destination address of the received message matches that of a wireless port number associated with another base station, a MAC frame is attached, which corresponds to a RA (forwarding destination address) of another base station, and then transmitted.).

**Regarding Claim 29**, Zhang discloses **a packet transmission system comprising a plurality of wireless base stations** (Zhang: Figure 3a. The network comprises at least two base stations.) **and one or more terminal devices belonging to one of the wireless base stations** (Zhang: Figure 3a; Col. 7, lines 10-15. Each base station has at least one mobile host belonging to it.), **wherein each of the wireless base stations includes:**

**a location table describing each of the terminal devices associated with a corresponding wireless base station to which the terminal device currently belongs** (Zhang: Col. 10, lines 21-29. Each base station contains a copy of a local subscriber list of its mirrored base station. Col. 10, lines 45-55. Each list contains the subscriber information of the terminal, and the associated base station that owns the subscriber.), **and a location table updating unit configured to exchange the information in the location table with the other wireless base stations and update the location table of this wireless base station** (Zhang: Col. 11, lines 33-38. Each base station is operative to transmit copies of the list to its associative mirror base station.).

Zhang is silent on route control tables, next hops, packet creating, and route determining.

Nakabayashi discloses **a route control table describing each of the other wireless base stations in the network in association with a next hop to which the received packet is to be forwarded** (Nakabayashi: Figure 5 and [0050]), **the next hop being determined in accordance with a wireless base station to which a source terminal device or a destination terminal device currently belongs** (Nakabayashi; Figure 4, [0047]. Each wireless base station contains a routing table. Figure 5, [0050]. The table contains information regarding a plurality of ports of a wireless bridge associated with a plurality of terminals existing in the direction of the connected, associated bridge.), **a packet creating unit configured, if said one of the wireless base stations is a wireless base station that first received a packet from a terminal device, to add address information of a wireless base station, to which the source terminal device or the destination terminal device of the received packet currently belongs, to the received packet with reference to the location table** (Nakabayashi: [0096]. A MAC frame is created based on the MAC address indicated by the connected bridge ID in the system sub-table corresponding to the receiver address field. The sub-table contains connected bridge ID fields ([0053]). Also see [0009], [0040], and Figure 2.), **a route determination unit configured, upon receiving a packet from another wireless base station, to determine a next hop wireless base station to which the received packet is to be forwarded based upon the address information of the wireless base station to which the source terminal device or the destination terminal device currently belongs, the address information included in the packet,**

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**with reference to the route control table** (Nakabayashi; Figures 4 and 8, [0066]. The connection table contains information identifying other wireless bridges in the range where packets may be sent or received. [0048]; processor and MAC controller determine wireless bridge path setting.), **a packet**

**transmission unit configured to transmit the packet to the next hop**

**wireless base station determined by the route determination unit**

(Nakabayashi: [0066]. The connection table is then utilized to determine the next wireless bridge to forward the packet based on the destination address and signal quality.).

Zhang and Nakabayashi are of similar fields in that both disclose a means to decrease network traffic (congestion) by reducing the amount of messages transferred in the network (Zhang: Col. 5, lines 38-41 and Nakabayashi: [0010-0012]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include forwarding packets through a transmission line as taught by Nakabayashi to increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network (Nakabayashi: [0098]).

**Regarding Claim 30**, the combination of Zhang and Nakabayashi discloses **the packet transmission system of claim 29, wherein the packet transmission unit of a corresponding wireless base station is further configured to transmit a message packet reporting participation of a new terminal device when the new terminal device belongs to the**

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**corresponding wireless base station** (Nakabayashi: [0042-0043]. BPDUs are exchanged to determine changes in network topologies.);  
**and wherein the location table updating unit is further configured to update the location table when the message packet is received from another wireless base station** (Zhang: Col. 2, lines 41-50).

**Regarding Claim 31**, the combination of Zhang and Nakabayashi discloses **the packet transmission system of claim 29, wherein the packet creating unit is configured, if said one of the wireless base stations is a wireless base station that first receives a packet from a terminal device, to add ID information of a transmission route for this packet to the receive packet** (Nakabayashi: [0050]), **and wherein upon receiving a packet from another wireless base station, the route determination unit determines the next hop wireless base station from the ID information of the transmission route included in the received packet, with reference to the route control table** (Nakabayashi: [0050]).

**Regarding Claim 32**, Zhang discloses **a wireless base station used in a wireless packet transmission system** (Zhang: Figure 3a. The network comprises at least two base stations.), **comprising:**  
**a location table describing each of the terminal devices associated with a corresponding wireless base station to which the terminal device currently belongs in said wireless packet transmission system** (Zhang: Col. 10, lines 21-29. Each base station contains a copy of a local subscriber list of its mirrored

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base station. Col. 10, lines 45-55. Each list contains the subscriber information of the terminal, and the associated base station that owns the subscriber.), **and a location table updating unit configured to exchange the information in the location table with the other wireless base stations and update the location table of this wireless base station** (Zhang: Col. 11, lines 33-38. Each base station is operative to transmit copies of the list to its associative mirror base station.).

Zhang is silent on route control tables, next hops, packet creating, and route determining.

Nakabayashi discloses **a route control table describing each of the other wireless base stations in the network in association with a next hop to which the received packet is to be forwarded** (Nakabayashi: Figure 5 and [0050]), **the next hop being determined in accordance with a wireless base station to which a source terminal device or a destination terminal device currently belongs** (Nakabayashi; Figure 4, [0047]. Each wireless base station contains a routing table. Figure 5, [0050]. The table contains information regarding a plurality of ports of a wireless bridge associated with a plurality of terminals existing in the direction of the connected, associated bridge.), **a packet creating unit configured, if said one of the wireless base stations is a wireless base station that first received a packet from a terminal device, to add address information of a wireless base station, to which the source terminal device or the destination terminal device of the received packet currently belongs, to the received packet with reference to the location**

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**table** (Nakabayashi: [0096]. A MAC frame is created based on the MAC address indicated by the connected bridge ID in the system sub-table corresponding to the receiver address field. The sub-table contains connected bridge ID fields ([0053]). Also see [0009], [0040], and Figure 2.), **a route determination unit configured, upon receiving a packet from another wireless base station, to determine a next hop wireless base station to which the received packet is to be forwarded based upon the address information of the wireless base station to which the source terminal device or the destination terminal device currently belongs, the address information included in the packet, with reference to the route control table** (Nakabayashi; Figures 4 and 8, [0066]. The connection table contains information identifying other wireless bridges in the range where packets may be sent or received. [0048]; processor and MAC controller determine wireless bridge path setting.), **a packet transmission unit configured to transmit the packet to the next hop wireless base station determined by the route determination unit** (Nakabayashi: [0066]. The connection table is then utilized to determine the next wireless bridge to forward the packet based on the destination address and signal quality.).

Zhang and Nakabayashi are of similar fields in that both disclose a means to decrease network traffic (congestion) by reducing the amount of messages transferred in the network (Zhang: Col. 5, lines 38-41 and Nakabayashi: [0010-0012]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include

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forwarding packets through a transmission line as taught by Nakabayashi to increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network (Nakabayashi: [0098]).

**Claims 33 and 34 are substantial duplicates of claims 30 and 31 and are therefore rejected under the same grounds.**

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN ELLIOTT whose telephone number is (571)270-7163. The examiner can normally be reached on Monday thru Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Aung S. Moe/  
Supervisory Patent Examiner, Art Unit 2474

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